

WHAT IS CLAIMED IS:

1. A fluid filled engine mount for an automotive vehicle, comprising:

- 5 a first mounting member;
a second mounting member disposed spaced away from the first mounting member;
an elastic body for elastically connecting the first mounting member and the second mounting member;
10 a pressure-receiving chamber filled with non-compressible fluid and partially defined by the elastic body so as to excite fluid pressure fluctuation upon input of vibration;
an equilibrium chamber filled with the non-compressible fluid and partially defined by a flexible layer so as to permit change in volume;
15 an orifice passage for connecting the equilibrium chamber to the pressure-receiving chamber, and tuned to a frequency band of engine idling vibrations;
an orifice control member operable by means of negative pressure exerted from an external space so as to restrict flow of the fluid through
20 the orifice passage when an absolute value of the exerted negative pressure is greater than a predetermined value; and
a negative pressure conduit of direct connection type, adapted to always introduce negative pressure available from an air intake port of an internal combustion engine to the orifice control member.

25

2. A fluid-filled engine mount according to claim 1, further comprising: a rubber elastic plate partially defining the pressure receiving chamber; and a working air chamber formed on an opposite side across from the rubber elastic plate in relation to the pressure-receiving chamber,
30 and adapted to function as the orifice control member, wherein the negative

pressure conduit is connected to the working air chamber so that the rubber elastic plate is suctioned to be held in contact with an interior face of the working air chamber to restrict a motion thereof when the absolute value of the negative pressure exerted to the working air chamber is greater than the predetermined value, and is moved away from the interior face of the working air chamber so as to be elastically deformable due to an elastic resiliency thereof, when the absolute value of the negative pressure is not greater than the predetermined value.

3. A fluid-filled engine mount according to claim 2, wherein the interior face of the working air chamber is defined by a recess having a mortar shape having a somewhat inward curve, and an opening of the recess is fluid-tightly close by the rubber elastic plate so as to provide the working air chamber, and the negative pressure conduit is open to an approximately central portion of a bottom face of the recess, while the rubber elastic plate has a generally dome shape having a smooth inner surface somewhat projecting into a pressure-receiving chamber side entirety, and having a outer surface with a central thick walled portion projecting outward in a central portion thereof.

4. A fluid-filled engine mount according to claim 1, further comprising:

a rubber elastic plate partially defining the pressure-receiving chamber and disposed elastically deformable due to a void formed on an opposite side across from the rubber elastic plate in relation to the pressure-receiving chamber;

a working air chamber disposed on an opposite side across from the flexible layer in relation to the equilibrium chamber, and adapted to function as the orifice control member,

wherein the negative pressure conduit is connected to the working

air chamber so that the negative pressure applied to the working air chamber is exerted on the rubber elastic plate of the pressure-receiving chamber via the equilibrium chamber and the orifice passage, and when the negative pressure applied to the working air chamber has an absolute value greater than the predetermined value, the rubber elastic plate undergoes retracted elastic deformation to exhibit high spring stiffness, and when the negative pressure applied to the working air chamber has an absolute value not greater than the predetermined value, the rubber elastic plate is free from the retracted elastic deformation and permits to be elastically deformable in a non-restricted state.

5. A fluid-filled engine mount according to claim 1, wherein the orifice control member includes: an orifice open/close valve member; a biasing member for always applying a biasing force to the orifice open/close valve member in order to elastically hold the valve member in an orifice closing state thereof; and a pneumatic actuator for actuating the orifice open/close valve member on the basis of air pressure action externally applied, and the negative pressure conduit is connected to the pneumatic actuator, and when the negative pressure applied to the pneumatic actuator has an absolute value not greater than the predetermined value, the orifice open/close valve is held in the orifice closing state by means of the biasing force applied thereto by the biasing member, and when the negative pressure applied to the working air chamber has an absolute value larger than the predetermined valve, the pneumatic actuator applies an actuating force to the orifice open/close valve so as to bring the orifice open/close valve to an orifice opening state thereof against the biasing force applied thereto.

6. A fluid-filled engine mount according to claim 5, wherein the pneumatic actuator is disposed on an opposite side across from the flexible

layer in relation to the equilibrium chamber, and an output member of the pneumatic actuator is opposed to an opening of the orifice passage to the equilibrium chamber with the flexible layer interposed therebetween, while the output member of the pneumatic actuator is biased toward and forcedly pressed onto the opening of the orifice passage by means of the biasing member to thereby fluid-tightly close the opening of the orifice passage to the equilibrium chamber.

7. A fluid-filled engine mount according to claim 5, further comprising a fluid passage disposed between the pressure-receiving chamber and the equilibrium chamber and always permitting a fluid communication between the chambers, and is tuned to a frequency range of engine shakes.